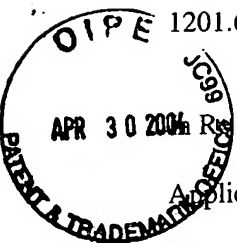


83282



1201.67474

PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Patent Application of:

Applicant(s): Choquette et al.

Serial No.: 10/618,034

Conf. No.: 4147

Filed: July 11, 2003

For: PHOTONIC CRYSTAL SINGLE  
TRANSVERSE MODE DEFECT  
STRUCTURE FOR VERTICAL  
CAVITY SURFACE EMITTING  
LASER

Art Unit: 2828

)  
)  
) I hereby certify that this paper is being deposited with the  
) United States Postal Service as FIRST-CLASS mail in an  
) envelope addressed to: Commissioner for Patents, P.O. Box  
) 1450, Alexandria, VA 22313-1450, on this date.

) 4/27/04

) Date

Attorney for Applicant(s)

Registration No. 35132

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This IDS is submitted under 37 C.F.R. §1.97(b) within either of the following time periods, whichever occurs last:

- (a) within three months of either the filing date of the national application or the date of entry into the national stage; or
- (b) before the mailing date of first office action on the merits (i.e., not including actions such as restriction requirements).

Applicant(s) submit herewith Form PTO-1449 (Information Disclosure Citation) together with copies of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 C.F.R. §1.56. Applicant(s) respectfully submit that the citation of any reference on Form PTO-1449 does not constitute an admission that the reference qualifies as prior art.

It is requested that the information disclosed on the enclosed Form PTO-1449 be made of record in this application.

The Commissioner is hereby authorized to charge any additional fees which may be required to this application under 37 C.F.R. §§1.16-1.17, or to credit any overpayment, to Deposit Account No. 07-2069. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By

Steven P. Fallon

Registration No. 35,132

300 South Wacker Drive – Suite 2500  
Chicago, Illinois 60606  
Telephone: (312) 360-0080  
Facsimile: (312) 360-9315  
Customer Number 24978

Form PTO-1449 U.S. Department of Commerce  
Patent and Trademark OfficeAttorney Docket No.:  
1201.67474Serial No.:  
10/618,034INFORMATION DISCLOSURE CITATION  
(Use several sheets if necessary)Applicant:  
Choquette et al.Filing Date:  
07/11/2003Group:  
Unassigned

## U.S. PATENT DOCUMENTS

Examiner Initial*	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	6,334,019	12-25-2001	Birks et al.			

## FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation	
						Yes	No
	10-284806	10-23-1998	Japan			abs	X
	11-186657	07-09-1999	Japan			abs	X

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Choquette et al., "Room temperature continuous wave InGaAsN quantum well vertical-cavity lasers emitting at 1.3 $\mu$ m", Electronics Letters, Vol. 36, No. 16, August 3, 2000.
	Serkland et al., "Two-element phased array of antiguided vertical-cavity lasers", Applied Physics Letters, Vol. 75, No. 24, December 13, 1999, pp. 3754-56.
	Song et al., "Single-fundamental-mode photonic-crystal vertical-cavity surface-emitting lasers", Applied Physics Letters, Vol. 80, No. 21, May 27, 2002, pp. 3901-03.
	Song et al., "Single-mode Photonic-crystal Vertical Cavity Surface Emitting Laser", Abstract No. CTuW1, CLEO, 2002, pp. 293-294.
	Ueda et al., "Transverse Mode Control and Reduction of Thermal Resistance in 850 nm Oxide Confined VCSELs", IEICE Trans. Electron., Vol. E85, No. 1, January 2002, pp. 64-70.
	Unold et al., "Large-Area Single-Mode VCSELs and the Self-Aligned Surface Relief", IEEE Journal on Selected Topics in Quantum Electronics, Vol. 7, No. 2, March/April 2001, pp. 386-392.
	Unold et al., "Photonic Crystal Surface-Emitting Lasers: Tailoring Waveguiding for Single-Mode Emission", Proc. 27 <sup>th</sup> Eur. Conf. on Opt. Comm., 2001, pp. 520-521.
	Warren et al., "On-axis far-field emission from two-dimensional phase-locked vertical cavity surface-emitting laser arrays with an integrated phase-corrector", Applied Physics Letters, Vol. 61, 1992, pp. 1484-86.
	Yokouchi et al., "Etching depth dependence of the effective refractive index in two-dimensional photonic-crystal-patterned vertical-cavity surface-emitting laser structures", Applied Physics Letters, Vol. 82, No. 9, March 3, 2003, pp. 1344-46.
	Yokouchi et al., "Vertical-cavity surface-emitting laser operating with photonic crystal seven-point defect structure", Applied Physics Letters, Vol. 82, No. 21, May 26, 2003, pp. 3608-10.
	Young et al., "Comparison of Wavelength Splitting for Selectively Oxidized, Ion Implanted, and Hybrid Vertical-Cavity Surface-Emitting Lasers", IEEE Journal of Quantum Electronics, Vol. 39, No. 5, May 2003, pp. 634-639.

Examiner

Date Considered

\*Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.